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# Evaluating IT Literacy Rate in the Public Sector in Sabah

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## Abstract

*Many countries around the world are encouraging the use of Information Technology (IT) in their belief that IT would be the growth engine of the future. In Malaysia, the Multimedia Super Corridor (MSC) program was established to spearhead Malaysia entry to the IT world. Electronic government, being one of the MSC flagship applications, has inspired some of the State Governments to formulate policy to increase the usage of IT in the public sector. The Sabah State Government has established the Sabah Information Technology Council (SITC) for that purpose.*

*In this paper, we report the result of a survey conducted in 1998 to gauge the IT literacy rate in the Public Sector in Sabah. Several recommendations to improve the IT literacy rate are also highlighted. We used questionnaires and site visits for data collection. The questionnaires were designed to measure the ability of the respondents to perform tasks of the 'Essential IT Skills'. We have defined a person as an IT literate if the respondent can perform 50% or more of the tasks in each of the four components of the 'Essential IT Skills'. It was found that less than half (46%) of the respondents consider themselves computer literate. However, only 17.6% can be classified as IT literate based on our definition. In addition, the percentage of respondents who had undergone formal training in IT is only 39%.*

**Keywords:** IT, Information Technology, IT Literacy

## Introduction

Information technology (IT) is being touted as the second revolution after the industrial revolution. Therefore, many countries around the world are busy devising policies and strategies to intensify the usage of IT in all aspects of life in their quest to be part of the IT revolution. In Malaysia, the Multimedia Super Corridor (MSC) was launched on the 1<sup>st</sup> August 1996 to spearhead Malaysia IT developments. Among the seven MSC flagship applications is the electronic government [1]. The launch of the MSC by the Malaysian Federal Government has inspired State Governments in Malaysia to formulate policies to increase the usage of IT in their respective states. In the state of Sabah, where the survey was conducted, the Sabah Information Technology Council (SITC) was established. This advisory body provides advice to the State Government regarding IT policy.

The successful implementation of the electronic government initiative, or any IT project for that matter, depends on:

- The IT infrastructure available i.e. the hardware and software
- The availability of knowledge workers who can make efficient use of the available IT resources

The second factor is the concern of this paper. This is because, in the opinion of the authors, it is more difficult to prepare knowledge worker than to provide IT infrastructure.

## IT Literacy Defined

Several definitions for IT literacy are used by different authors. Generally, IT literacy is defined as possessing the knowledge and understanding of computers and information

systems in combination with the ability to use them effectively [2]. Day and Athey [3] identified five complementary levels required in gaining and retaining computing literacy. These are:

1. Understanding the role of the computer in the society;
2. Being comfortable with computers and machines;
3. Using computers as tools to support routine activities;
4. Understanding the advantages/disadvantages of computers;
5. Gaining some knowledge of programming, and developing the ability to design computer applications

A report by the Computer Policy and Teaching Committees at the University of Edinburgh, UK [4] has identified the following 'core IT skills':

1. Ability to use a wide range of the features of a modern word processor;
2. Ability to use electronic mail within the EdLAN network;
3. Ability to access and make effective use of both local and distant library and bibliographic reference sources;
4. Ability to retrieve specific information from a public source;
5. Ability to manage the interaction between all of these activities;

We have identified four essentials skills that are, in our opinion, required for a person to make effective use of the available IT resources. These four "essential IT skills" are listed below:

1. Able to use a PC's operating system;
2. Make an effective use of common features of a word processor;
3. Able to use electronic mail;
4. Able to search local and distant information databases;

## Methodology

Two types of questionnaires were distributed to the state government departments and ministries. Type I was given to the head of each department and was intended to gather information about the IT infrastructure available in the organization. While, Type II was distributed to individuals selected from the various departments and ministries. Type II questionnaires were used to collect data about the IT literacy among the public civil servants. We also visited some of the government departments and ministries randomly to counter check whether the information provided in the questionnaire was accurate or not.

One copy of Type I questionnaires and 5 copies of Type II were sent to all government departments and ministries. It was left to the head of each department to identify the 5 respondents. A total of 37 department/ministries having a total workforce of more than 10,000 have responded. Out of the 185 individual respondents, only 125 have responded. The sampling method used may have introduced a positive bias in the result as the respondents may have been selected from those employees who have access to computer.

## Results

### Self Ranking

Respondents were asked to rank their skills in using computers and common office automation tools such as word-processing and spreadsheet. They were asked to select one of three possible rankings: **very familiar**, **familiar**, and **not familiar**. The results are summarized in table 1.

Respondent were also asked if they consider themselves computer literate, 46% said they are and 35% said they are not and the rest (19%) did not answer this question.

### **IT Literacy Rate Measurement**

To measure the IT literacy rates of the respondents, several tasks were listed for each of the four components of the essential IT skills (table 2). Respondents were asked to tick (✓) the tasks they can perform. A respondent who can perform 50% or more of the listed tasks for a given skill is considered to have acquired that skill. Thus, a person who acquired all the four components of the essential IT skills is considered to be IT literate.

#### Using a PC's Operating Systems

Six common tasks that are typically performed on routine basis by computer users were listed under this category. It was found that only 56.8% of the respondents have acquired this skill. The results are summarized in table 3.

#### Word Processing

Four essential word processing tasks were given in this category. Respondents were asked to tick the tasks they can perform. From the results, summarized in table 4, it can be seen that 75.2% of the respondents have acquired this skill.

#### Electronic Mail

This skill is considered as an essential component in the essential IT skills because it is an important element in the successful implementation of the electronic government initiative. It was found that the percentage of respondents who have used e-mail is only 37%. The results are summarized in table 5.

#### Using Local and Distant Databases

Three common tasks for using local databases and two tasks for using distant databases, specifically the Word Wide Web were listed in this category. It was found that only 20.8% of the respondents have acquired this skill. The results are summarized in table 6.

### **Conclusions**

Based on our definition of an IT literate person, it was found that only 17.6% of the respondents can be considered as IT literate. However, the percentage of respondents who consider themselves to be IT literate is 46%. The difference could be attributed to the different definition of IT literacy as 18.4% of the respondents who considered themselves to be IT literate have not acquired component 4 (Using local and distant databases) of the essential IT skills.

In addition, The level of IT training is found to be inadequate as only 39% of respondents have had formal IT training. Thus, we can conclude that the inadequate level of IT literacy coupled with insufficient training may be an obstacle to the successful implementation of the electronic government initiative.

### **Recommendation**

1. Policies emphasizing the importance of IT skills and the minimum level of IT skills required from public servants need to be formulated.
2. Establish an effective mechanism for improving the IT skills of the existing staff by providing relevant and effective training and as well as monitoring the post-training use of the acquired IT skills.
3. Promote the use of IT-based teaching medium during training
4. Provide the required IT infrastructure so that sufficient access is given to all staff to improve their acquired IT skills
5. Provide effective help mechanism where staff can get help with their IT problems

### **References**

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3. Day, J.C. and T. Athey. *Microcomputers and Applications*, Second Edition, Scott, Foresman/Little, Brown Higher Education, 1989.
4. <http://www.flp.ed.ac.uk/LTRG/IT.html>
5. <http://www.whatis.com>

## Appendix

**Table 1. Self-Ranking**

Category	Very Familiar	Familiar	Not Familiar
Word Processing	34%	52%	5%
Spreadsheet	23%	40%	22%
Database	14%	26%	44%
Communication Skills	12%	22%	44%
Using Computers	61%	26%	14%

**Table 2. Essential IT Skills**

Skill Category	Tasks
Using a PC's Operating System	<ol style="list-style-type: none"> <li>1. Start/Shut down computer system and peripherals</li> <li>2. Start applications</li> <li>3. Organize folders and files</li> <li>4. Make backup copies of applications and documents</li> <li>5. Use on-line help</li> <li>6. Install new application and upgrade existing application</li> </ol>
Word Processing	<ol style="list-style-type: none"> <li>1. Enter and edit text</li> <li>2. Change the text format and style</li> <li>3. Page setup including margins, and header and footer</li> <li>4. Using a spellchecker</li> </ol>
E-mail	<ol style="list-style-type: none"> <li>1. Do you use e-mail? Yes or No</li> </ol>
Using Local and Distant Database	<ol style="list-style-type: none"> <li>1. Do you have Internet Access? Yes or No</li> <li>2. Connect to the internet</li> <li>3. Access and use resources on the World Wide Web</li> <li>4. Query database</li> <li>5. Sort your query by a given field</li> <li>6. Print reports</li> </ol>

**Table 3. Using a PC's Operating System**

No of tasks performed	Percentage
No task or no response	10.4
One task only	11.2
50% or more	50.4
All tasks	30.4

**Table 4. Word Processing**

No of tasks performed	Percentage
No task or no response	7.2
One task only	5.6
50% or more	56.8
All tasks	65.6

**Table 5. E-mail**

<b>Category</b>	<b>Percentage</b>
Used e-mail	37%
Not used e-mail	54%
No response	10%

**Table 6. Using Local and Distant Databases**

<b>No of tasks performed</b>	<b>Percentage</b>
No Internet Access	61.6
No database skill	53.6
50% or more	20.8
All tasks	13.6

**Table 7. Training**

<b>Type</b>	<b>Percentage</b>
Had formal training	39%
Did not have formal training	56%
No response	5%